

A Prospective Study to Find Out the Incidence of Complications of Thyroidectomy: An Institute Based Study

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ABSTRACT

Background: Thyroid disorders are one of the most common endocrine diseases. Thyroidectomy is recommended for benign condition such as symptomatic large goiters and for the treatment of malignant disease of the thyroid gland. It has potential complications. Hence, the present study was conducted to find the incidence of complications of thyroidectomy.

Materials and Methods: The present study was conducted to find the incidence of complications of thyroidectomy over a period of 1 year. 480 cases who underwent thyroidectomy for any indications were included in the study. The diagnosis of thyroid swelling was based on detailed history, thorough clinical examination and relevant investigations. The patients were monitored for any complications. Statistical analysis was performed with IBM SPSS Statistics (International Business Machines Corporation (IBM), New York, USA), version 22 for Windows.

Results: In the present study total patients were 480 in which 60.41 were females and 39.58% were males. Post-operative complications occur in 18 males and 42 females. Recurrent Laryngeal nerve injury occur in 18.33% patients, External branch of superior laryngeal nerves occur in 10% patients, flap odema was present in 13.33%, Wound hematoma in 6.66%, Permanent hypoparathyroidism was present in 21.66%,

transient hypoparathyroidism was present in 10%, wound infection occurs in 11.66%, hypothyroidism occur in 8.33%.

Conclusion: This study concluded that majority of patients had permanent hypoparathyroidism. The proper Identification and preservation of the laryngeal nerves and parathyroids help in the decline of incidences of complications.

Keywords: Recurrent Laryngeal Nerve, External Branch of Superior Laryngeal Nerves, Flap Odema, Wound Hematoma, Hypoparathyroidism, Hypothyroidism.


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INTRODUCTION

Thyroid disorders are one of the most common endocrine diseases.¹ The thyroid is a small endocrine gland which produces hormones that regulate various metabolic activities of the body.² Enlargement of the thyroid gland may be due to different conditions. The majority of patients with thyroid enlargement have benign thyroid diseases. Neoplastic, inflammatory and endocrine abnormalities of the thyroid gland are common, affecting approximately 11% of the general population.³ Thyroid diseases can be grouped into benign and malignant types. In benign cases, the common diseases encountered are thyroiditis (mostly Hashimoto thyroiditis), goiter, thyroid adenoma, and so forth. Total thyroidectomy is a surgical procedure which is performed to treat various thyroid diseases wherein the thyroid gland is removed. But the use of total thyroidectomy procedure is considered not to be

safe for thyroid carcinomas and also for treatment of few benign diseases because of the risks involved.⁴ As such, surgery of the thyroid gland abnormalities is quite common.⁵ Once a decision for thyroid surgery has been made, the extent and type of the operation depends on a number of factors including; patients age, size of the nodule, the suspected preoperative diagnosis including the result of the fine needle aspiration cytology, presence or absence of involved lymph nodes in the neck.⁶ The possible early complications of thyroidectomy are haemorrhage, recurrent laryngeal nerve (RLN) and external branch of superior laryngeal nerve (EBSLN) injuries, hypoparathyroidism (HPT), wound infection, seroma and thyroid crisis whereas the late one is thyroid insufficiency.⁷ The present study was conducted to find the incidence of complications of thyroidectomy.

MATERIALS AND METHODS

The present study was conducted to find the incidence of complications of thyroidectomy over a period of 1 year. Before the commencement of the study ethical approval was taken from the Ethical committee of the institute. 480 cases who underwent thyroidectomy for any indications were included in the study. The diagnosis of thyroid swelling was based on detailed history, thorough clinical examination and relevant investigations such as thyroid function tests (serum T3, T4, TSH level), Ultrasonogram, Isotope scanning and fine needle aspiration cytology (FNAC). The patients were monitored for any complications. All the data were compiled and tabulated in order to obtain a statistical and comprehensive results of the study. Statistical analysis was performed with IBM SPSS Statistics (International Business Machines Corporation (IBM), New York, USA), version 22 for Windows.

RESULTS

In the present study total patients were 480 in which 60.41% were females and 39.58% were males. Post-operative complications occur in 18 males and 42 females. Recurrent Laryngeal nerve injury occur in 18.33% patients, External branch of superior laryngeal nerves occur in 10% patients, flap edema was present in 13.33%, Wound hematoma in 6.66%, Permanent hypoparathyroidism was present in 21.66%, Transient hypoparathyroidism was present in 10%, wound infection occurs in 11.66%, hypothyroidism occur in 8.33%.

Table 1: Distribution of patients according to gender

| Gender | N(%) |
|--------|-------------|
| Male | 190(39.58%) |
| Female | 290(60.41%) |
| Total | 480(100%) |

Table 2: Distribution of patients with post-operative complications according to gender

| Gender | N |
|--------|----|
| Male | 18 |
| Female | 42 |
| Total | 60 |

Table 3: Complications after thyroidectomy

| Complication | N(%) |
|------------------------------|------------|
| RLN injury | 11(18.33%) |
| EBSLN injury | 6(10%) |
| Flap edema | 8(13.33%) |
| Wound hematoma | 4(6.66%) |
| Permanent hypoparathyroidism | 13(21.66%) |
| Transient hypoparathyroidism | 6(10%) |
| Wound infection | 7(11.66%) |
| Hypothyroidism | 5(8.33%) |
| Total | 60(100%) |

DISCUSSION

Diseases of thyroid gland are of great importance because they are a challenge for medical or surgical management. Total thyroidectomy is considered as the usual surgical procedure to treat thyroid diseases. The principal diseases of the thyroid gland are goitre, hypothyroidism, hyperthyroidism, thyroiditis, and neoplasms.⁸

In the present study total patients were 480 in which 60.41% were females and 39.58% were males. Post-operative complications occur in 18 males and 42 females. Recurrent Laryngeal nerve injury occur in 18.33% patients, External branch of superior laryngeal nerves occur in 10% patients, flap edema was present in 13.33%, Wound hematoma in 6.66%, Permanent hypoparathyroidism was present in 21.66%, Transient hypoparathyroidism was present in 10%, wound infection occurs in 11.66%, hypothyroidism occur in 8.33%.

Yan *et al.* showed that of 7385 patients undergoing thyroidectomy, 71% were female⁹ and Huang *et al.* reported that among 3428 patients undergoing thyroidectomy, the ratio of female to male was 5.24:1, while the mean age of patients was more than 40 years.¹⁰

The overall incidence of transient and permanent hypoparathyroidism was 7.3% and 1.5%, respectively in a study by Thomusch O *et al.*¹¹

Gonçalves Filho J. demonstrated that there was transient hypocalcemia in 27.5%, permanent hypocalcemia in 5.1%.¹²

A study by Rahman revealed a 4% incidence of recurrent laryngeal nerve injury.¹³

Unilateral RLN palsy causes severe voice dysfunction and occasional aspiration symptoms. The symptoms rapidly improve in transient nerve palsy in 6-8 months. In permanent nerve palsy, it may take more than a year.¹⁴

In the literature, the figures quoted for permanent RLN palsy varies from 0 to 14% with the highest quoted for malignancy of the thyroid or reoperations of the thyroid.¹⁵

Some studies reported that the incidences of RLN injuries, hypocalcemia, and other postoperative complications in patients undergoing total thyroidectomy were significantly higher than patients undergoing unilateral thyroidectomy.^{10,16}

Previous studies have reported RLN injury, transient hypocalcemia, and hypoparathyroidism as the common complications of thyroidectomy, while other complications such as cellulitis, infection, and damages to the carotid artery, jugular vein, and esophagus are uncommon.^{17,18}

CONCLUSION

This study concluded that majority of patients had permanent hypoparathyroidism. The proper identification and preservation of the laryngeal nerves and parathyroids help in the decline of incidences of complications.

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